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10/607,060

06/27/2003

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7590 07/30/2007  
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EXAMINER

MOORE, IAN N

ART UNIT

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2616

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                               |                                  |  |
|------------------------------|-------------------------------|----------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/607,060 | Applicant(s)<br>SUZUKI, SHINSUKE |  |
|                              | Examiner<br>Ian N. Moore      | Art Unit<br>2616                 |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5 is/are rejected.
- 7) ☒ Claim(s) 4 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10-23-03, 6-27-03, 9-2-05</u>                                 | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of **embodiment I** with claims 1-5 and a new claim 13 in the reply filed on 4-27-2007 is acknowledged.

### *Information Disclosure Statement*

2. The information disclosure statement filed 6-27-2003 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. In particular, the listed documents "**draft-ietf-pim-dm-new-v2.01.txt**" and "**RFC 2362**" are not submitted.

### *Specification*

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: **Multicast Packet Forwarding Equipment.**

4. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01. The specification page 5, line 12-13 discloses the "**<http://www.cisco.com/.../dtssm5t.htm>**".

***Claim Objections***

5. Claims 3-5 and 13 are objected to because of the following informalities:

**Claim 3** recites "a multicast group address" in line 3-4. For consistency and clarification with "an address of the multicast group" recited in claim 2, line 3, it is suggested to change "a multicast group address" in line 3-4 to "**said** multicast group address", or "**the** multicast group address".

**Claim 3** recites "a multicast source address" in lines 4-5, 8-9 and 12. For consistency with clarification "an address of the source of the multicast group" recited in claim 2, line 3, it is suggested to change "a multicast source address" in lines 4-5, 8-9 and 12 to "**said** multicast source address", or "**the** multicast source address".

**Claim 3** recites "a request of joining to or leaving from a multicast group" in line 6. For consistency and clarification with "**first request** of joining to or leaving from a **multicast group**" recited in claim 1, line 4, it is suggested to change "a request of joining to or leaving from a **multicast group**" in line 6 to "**said first** request of joining to or leaving from **said** multicast **group**", or "**the first** request of joining to or leaving from **the** multicast group".

**Claim 3** recites "a multicast client node" in line 8. For consistency and with "**said** multicast client node" recited in claim 2, line 3, it is suggested to change "a multicast client node" in line 8 to "**said** multicast client address".

**Claim 3** recites "a multicast source" in line 12. For consistency with clarification "a multicast source" recited in claim 1, line 5-6, it is suggested to change "a multicast source" in line 12 to "**said** multicast source", or "**the** multicast source".

**Claim 4** recites "a multicast source" in line 4. For consistency with clarification "a multicast source" recited in claim 1, line 5-6, it is suggested to change "a multicast source" in line 4 to "**said** multicast source", or "**the** multicast source".

**Claim 13** recites, "a multicast join request" in line 9 and "**the** multicast join request" in line 12. For consistency and clarification with "**a request** of joining to a multicast group" recited in line 6-7, it is suggested to change "a multicast join request" in line 9 to "**the request** of joining to **the** multicast group", and "**the** multicast join request" in line 12 to "**the request** of joining to **the** multicast group".

**Claim 5** is also objected since it is depended upon objected claim 3 as set forth above.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Boers (US 20040022244A1).

**Regarding Claim 1**, Boers discloses packet forwarding equipment (see FIG. 1, 2a-b. multicast network device, MND, (i.e. Multicast Router) 114 (e); see page 2, paragraph 29) for connecting multicast client nodes (see FIG. 1,2, multiple hosts 124; see page 2, paragraph 18; see

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page 3, paragraph 35) and a multicast network (see FIG. 1, 2a, multicast network 100; see page 2, paragraph 27) including at least one multicast source server (see FIG. 1, multicast source/server 102a; see page 1, paragraph 6; see page 3, paragraph 31-32), comprising:

means for translating (see FIG. 2a, a combined mapping system of messaging engine 122, SSM mapping engine 118) first request of joining to or leaving from a multicast group (see FIG. 2a, mapping/translating host membership report 204 which indicates to become a member of a multicast group (G); see page 2, paragraph 31; see page 3, paragraph 36-43) which is sent from one of said multicast client nodes that cannot designate a multicast source (see FIG. 2a, which is transmitted by a host 124 that cannot assign/designate a multicast source address; see page 2, paragraph 34; see page 3, paragraph 34-43), into second request of joining to or leaving from the multicast group with designating a source of the multicast group (see FIG. 2b, mapping/translating received join report message to PIM (Sa,G) 210 join the multicast group G with a source address Sa of the multicast group; see page 3, paragraph 36-44); and

means for transferring (see FIG. 2b, output port of the MND router 114(e)) the second request to said multicast network (see page 3, paragraph 44; sending PIM (Sa,G) to multicast network (e.g. towards source server 102(a)).

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2, 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boers in view of Jain (US 20030079040A1).

**Regarding Claim 2**, Boers discloses wherein an address of the source of the multicast group (see FIG. 2b, source address, Sa, of source server 102(a)) is determined on the basis of an address of the multicast group to which said joining or leaving request has been sent from said multicast client node (see page 3, paragraph 41-44; Sa is computed according to the multicast group address to which join request has been send from host 124);

Boers does not explicitly disclose an address of said multicast client node.

However, Jain teaches the source of the multicast group (see page 4, paragraph 45; page 5, paragraph 63; explicit source address SSM) is determined on the basis of an address of said multicast client node (see page 2, paragraph 25; see page 3, paragraph 30; see page 4, paragraph 45; page 5, paragraph 63; source address of multicast sender/transmitter end station) and an address of the multicast group to which said joining or leaving request has been sent from said multicast client node (see page 4, paragraph 45-53; see page 5, paragraph 62-67; destination address (i.e. which is the first three bytes of the group address)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an address of said multicast client node, as taught by Jain in the system of Boers, so that it would forward multicast packets efficiently and quickly; see Jain page 1, paragraph 11-12.

**Regarding Claim 3**, Boers discloses a table (see FIG. 2a, a combined table/list system of memory 116 and SSM mapping database 120 contains a table/list) comprised of a plurality of entries each indicating relations of a multicast group address (see page 3, paragraph 38-39,

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parameters showing/indicating relation/mapping of SSM group address, G), and a multicast source address corresponding to the multicast group address (see page 3, paragraph 39-40; to source address, Sa , which corresponds to multicast group address (G)),

wherein when a request of joining or leaving a multicast group is issued from a multicast client node which does not have a function of designating a multicast source address (see FIG. 2b, when joining report message is send by host 124 that does not have a function or know the assigning/allocating Sa address; see page 2, paragraph 31; see page 3, paragraph 36-43), said table is searched for an entry including the address of the multicast group to which said join or leave request has to be sent (see page 3, paragraph 38-46; the combined table/list system 116-120 is searched/queried/find for a parameter/entry that includes the multicast group address (G) to which join report has to be sent), thereby to designate a multicast source with a multicast source address indicated by the retrieved entry (see page 3, paragraph 43-44; assigning/allocating a multicast source server 102(a) with a multicast source address Sa of queried/find/retrieved parameter).

Boers does not explicitly disclose a multicast client node address, the address of the multicast client node which has issued said join or leave request,

However, Jain teaches a table (see FIG. 2, Forwarding CAM 106 which contains Forwarding Information (FID)) comprised of a plurality of entries each indicating relations of a multicast group address (see page 4, paragraph 45; contains the data/entry each showing/indicating matching/relation/corresponding multicast group address in multicast group address table), a multicast client node address (see page 2, paragraph 25; see page 3, paragraph 30; see page 4, paragraph 45; page 5, paragraph 63; source address of multicast



sender/transmitter end station in a FID table), and a multicast source address (see page 4, paragraph 45; page 5, paragraph 63; explicit source address SSM) corresponding to the multicast group address (see page 4, paragraph 45-53; see page 5, paragraph 62-67; maps/relates/corresponds to destination address (i.e. which is the first three bytes of the group address)) and the multicast client node address (see page 2, paragraph 25; see page 3, paragraph 30; see page 4, paragraph 45; page 5, paragraph 63; and source address of multicast sender/transmitter end station);

said table is searched for an entry including the address of the multicast client node which has issued said join or leave request (see page 2, paragraph 25; see page 3, paragraph 30; see page 4, paragraph 45-53; page 5, paragraph 63-67; FID table is searched/lookup for an data including the source address of multicast sender/transmitter end station) and the address of the multicast group to which said join or leave request has to be sent (see page 4, paragraph 45; and multicast group address in multicast group address table to which request to join/prune message has to be send), thereby to designate a multicast source with a multicast source address indicated by the retrieved entry (see page 2, paragraph 25; see page 3, paragraph 30; see page 4, paragraph 45-53; page 5, paragraph 63-67; allocating/assigning an explicit source device/terminal with explicit source address SSM shows/indicates by the matched data).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to a multicast client node address, the address of the multicast client node which has issued said join or leave request, as taught by Jain in the system of Boers, so that it would forward multicast packets efficiently and quickly; see Jain page 1, paragraph 11-12.

**Regarding Claim 5**, Boers discloses said table (see FIG. 2a, a combined table/list system of memory 116 and SSM mapping database 120 contains a table/list) is provided either in the packet forwarding equipment (see FIG. 1, 2a-b. multicast network device, MND, (i.e. Multicast Router) 114 (e); see page 2, paragraph 29) or in a different apparatus (see FIG. 2a, System 126 with database 128) which can be accessed by the packet forwarding equipment via a communication line (see FIG. 2a, which can be accessed by the MND 114(e) via a communication link between them); see page 3, paragraph 42-44.

***Allowable Subject Matter***

10. **Dependent claim 4** is objected to as set forth above in paragraph 5 and being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening. The following is a statement of reasons for the indication of allowable subject matter:

Claim 4 is allowable over the prior art of record since the cited reference taken individually or in combination fails to particularly disclose or render obvious the following italic limitations:

**In claim 4**, ... *when the multicast source address of the entry retrieved from said table is "don't care", said request is processed as a request to join or leave an any-source multicast group which does not designate a multicast source...* in combination with other limitations recited as specified in Claim 4.

11. **Independent claim 13** is objected to as set forth in paragraph 5, but would be allowable if rewritten to overcome the objections.

The following is a statement of reasons for the indication of allowable subject matter:

Independent Claim 13 is allowable over the prior art of record since the cited reference taken individually or in combination fails to particularly disclose or render obvious the following italic limitations:

**In claim 13, ... *determining whether the multicast join request received by said line accommodating module is a request to join a source-specific multicast group or a request to join an any-source multicast group...translating said received join request into a join request to a source-specific multicast group on the basis of a result of the search...*** in combination with other limitations recited as specified in Claim 13.

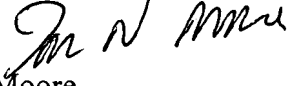
### ***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N. Moore whose telephone number is 571-272-3085. The examiner can normally be reached on 9:00 AM- 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 571-272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Ian N. Moore  
Examiner  
Art Unit 2616

7-17-07